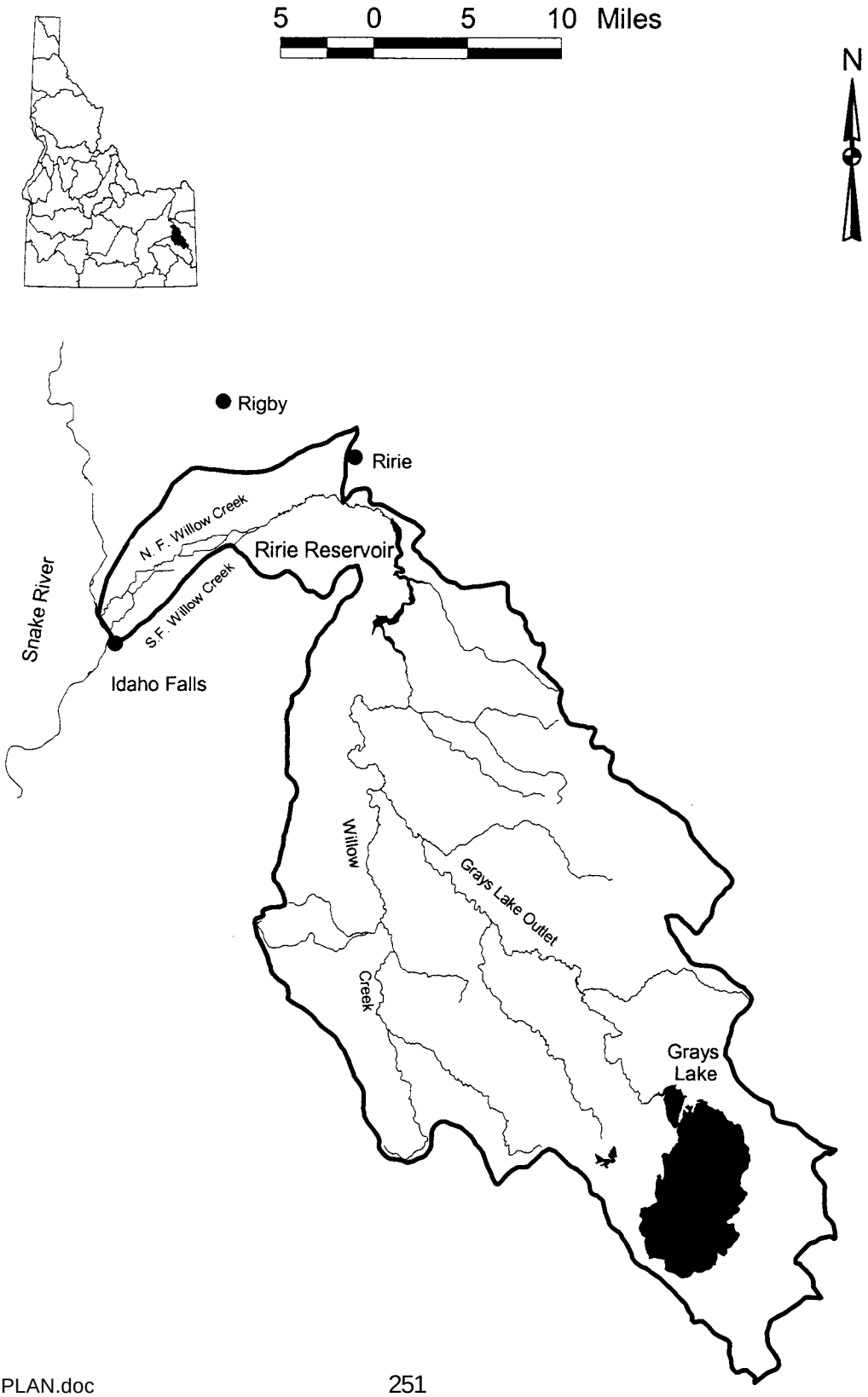
Willow Creek Drainage



28. WILLOW CREEK DRAINAGE

A. Overview

Major tributaries to Willow Creek are Grays Lake Outlet and Cranes, Meadow, and Tex creeks. Since 1924, up to 20,000 acre-feet of water a year have been diverted from the Willow Creek drainage to Blackfoot Reservoir through Clark's Cut Canal. The construction of Ririe Dam, a rock-face, earth-filled structure, was completed by the Corp of Engineers in 1976. The reservoir has a total capacity of 80,540 acre-feet, a surface area of 1,470 acres, and is managed for priorities of flood control and irrigation water storage. The reservoir is drawn down to 35,000 acre-feet annually by November 1 to provide winter flow storage (flood control).

The 20 miles of Willow Creek below Ririe Dam are controlled for irrigation and flood control. This segment of Willow Creek is annually dewatered to keep ice buildup from causing floods near Idaho Falls. Maintaining a wild fishery in this area is only feasible with minimum year-long releases below Ririe Reservoir, although numerous trout from irrigation ditches which flow into Willow Creek via the South Fork Snake River provide a seasonal fishery. Prior to dewatering lower Willow Creek in 1976, the catch rate was 0.44 trout/hour with 10,500 hours (5,600 angler days) of effort expended annually. Catch rates declined to 0.33 trout/hour and 3,000 hours of effort in 1980. Game fish found in this area are primarily cutthroat trout and brown trout. Lesser numbers of rainbow trout and whitefish are also present.

Ririe Reservoir, 20 miles from Idaho Falls, has developed into a popular fishery. It supports one of the most intensive salmonid reservoir fisheries in Idaho. In 1983, angler use was approximately 60,000 hours with a catch rate of 0.20 trout/hour. This fishery is supported primarily through hatchery releases of rainbow trout and kokanee. Minor catches of cutthroat trout and brown trout are also made. Steep banks and limited access restrict bank fishermen to 35% of the effort. Kokanee have been stocked since 1990. Smallmouth bass were introduced into Ririe Reservoir from 1984 to 1986. A self-reproducing population has developed from the original introductions. The smallmouth bass fishery in Ririe Reservoir is limited by the short growing season at this latitude and altitude. Smallmouth bass growth will not approach growth rates in western Idaho impoundments. Without restrictive harvest regulations, angling exploitation will keep the upper size distribution of this population at less than 12 inches, the minimum harvest length allowed.

The 95 miles of streams in the Willow Creek drainage above Ririe Reservoir are mainly in narrow canyons and contain pure wild cutthroat trout populations. Water flows vary from extremes of several thousand second-feet during runoff to a few second-feet in late summer and winter in Willow Creek. Intense agricultural practices have contributed to poor riparian habitat conditions in the upper watershed. Water quantity and quality has suffered as a result. The Natural Resource Conservation Service (NRCS) has identified the Willow Creek drainage as one of the ten worst soil erosion areas in the United States. A water quality program has been initiated to reduce loss of topsoils and improve the water quality of Willow Creek above Ririe Dam. Riparian habitat improvement through improved grazing management is a high priority on both state and private lands. The Department is working with the NRCS, the Eastern Idaho Grazing Association, and other local groups to facilitate improvements in resource management practices.

Cutthroat trout in the mainstem areas of Willow Creek and Grays Lake Outlet are dependent on downstream movement from tributary spawning and nursery areas. Most

tributaries of Willow Creek contain wild populations of cutthroat trout, brown and/or brook trout. Native cutthroat trout populations are presently depressed in the drainage but remain viable. Overharvest of cutthroat trout once contributed to the decline of this species but restrictive harvest regulations have reduced angling exploitation as a threat. Cutthroat trout and brown trout presently dominate the catch in tributaries. Hatchery catchable rainbow trout and brown trout fingerlings are no longer stocked in the Willow Creek drainage above Ririe Reservoir. No wild rainbow trout have been found in the Willow Creek drainage and genetic surveys in 1999 and 2000 have documented that Willow Creek cutthroat trout are free of rainbow trout introgression. Beginning in 1990, the Upper Snake Region restricted harvest regulation was enacted for cutthroat trout in rivers and streams. The limit is two cutthroat trout none less than 16 inches. This regulation has contributed to the restoration of cutthroat trout populations in the Willow Creek system from above Ririe Reservoir. Severe drought conditions in the late 1980s through 1994 caused the fish habitat quality and trout populations in this system to at best maintain status quo. By 1995, increased numbers and size of cutthroat trout were documented.

B. Objectives and Programs

1. Objective: Restore native fluvial cutthroat trout populations in Willow Creek and tributaries.

   Program: Maintain restrictive harvest regulations for cutthroat trout and late (July 1) season openers in principal spawning tributaries.

   Program: Evaluate private stockings of fish in the drainage for possible negative effects on native cutthroat trout and regulate accordingly.

   Program: Work for habitat and stream flow protection and enhancement.

2. Objective: Maintain a satisfactory salmonid fishery in Ririe Reservoir, emphasizing cutthroat trout conservation.

   Program: Stock sterile hatchery rainbow trout at a size and on a schedule that provides high quality fishing with economic efficiency.

   Program: Work to improve habitat and stream flow protection and enhancement to provide adequate spawning habitat for reservoir salmonids.

3. Objective: Maintain a satisfactory smallmouth bass fishery in Ririe Reservoir.

   Program: Monitor the bass population, primarily with data provided by organized tournament bass anglers and regularly scheduled creel surveys.

   Program: Evaluate public demand for higher quality bass angling experiences on Ririe Reservoir. If public demand indicates quality bass management practices are desirable, evaluate acceptable restrictive harvest rules to increase the mean length of Ririe Reservoir smallmouth bass. Investigate bioenergetics and bass growth potential to determine if quality bass rules will work biologically.

   Program: Work with organized bass anglers to minimize the biological and social impacts of bass tournaments.

4. Objective: Increase utilization and appreciation of abundant yellow perch in Ririe Reservoir.

   Program: Continue efforts to educate the public about the positive aspects of yellow perch (quality table fare, catchability, and unlimited harvest opportunities).

5. Objective: Increase use of chubs and suckers by predators.

   Program: Evaluate introduction of tiger muskie, a sterile hybrid (muskellunge x northern pike).

DRAINAGE: Willow Creek

Water	Miles/acres	Fishery			Management Direction
		Type	Species present	Management	
Willow Creek from Eagle Rock Canal to Ririe Dam	5/	Coldwater	Rainbow trout Brown trout Cutthroat trout	General Quality	Area seasonally de-watered.
Ririe Reservoir	/1,470	Mixed	Rainbow trout Kokanee Brown trout Yellow perch Smallmouth bass Cutthroat trout	Put-and-take-trout General Quality	Sterile rainbow trout put-and-take fishery Put-and-grow kokanee fishery. Maintain catch rates of 0.6 fish/hr with lengths 10 inches to 12 inches. Manage bass under general statewide bass limits. Monitor populations. Monitor cutthroat trout harvest rates in reservoir and evaluate need for restrictive reservoir harvest rule.
Willow Creek and Grays Lake Outlet above Ririe Reservoir	80/	Coldwater	Cutthroat trout Brown trout	Quality General	Restore wild populations of native cutthroat trout through restricted harvest regulations and habitat enhancement.
All other tributaries	83/	Coldwater	Cutthroat trout Brown trout Brook trout	Quality General	Restore wild populations of native cutthroat trout through restricted harvest rules, delayed season openers and habitat enhancement. Catch rates of 1.0 fish/hr. Maintain bonus brook trout possession limit.